Introduction

This guide addresses pedon related tasks that need to be performed as soon as possible after the release of NASIS 6.0, and how to deal with "Special Referential Integrity Validation Errors" when you import pedons into your local NASIS database. This guide will be expanded if and when any additional issues need to be addressed.

What You Should Do Now that NASIS 6.0 has Been Released

DO NOT continue to collect pedon data using an existing pedon.mdb whose local plant lookup data were created prior to 04/20/2010. Data in any such database should be imported into your local NASIS 6.0 database as soon as possible. This document explains the steps for resolving "Special Referential Integrity Validation Errors that prevent that data from being imported.

As absolutely soon as possible, any database you use to enter new pedons should include geographic area, geomorphic feature and local plant lookup data that were created on or after 04/20/2010. Using such a database for the entry of new pedons will dramatically reduce the number of validation errors that prevent your pedons from being able to be imported into your local NASIS database. In addition, the database you use to enter new pedons should never have included local plant lookup data created prior to 04/20/2010. The local plant data in a pedon.mdb, where that local plant data were created prior to 04/20/2010, should NEVER be updated with local plant data created on or after 04/20/2010 for the following two reasons:

1. All of the local plant lookup data has been rekeyed and updating your local plant lookup data is likely to result in actually changing one or more local plants to an entirely different plant!

2. The update of the local plant data in a pedon.mdb never deletes an existing local plant record. Therefore an update with local plant data created on or after 04/20/2010 is likely to leave local plant records that were created prior to 04/20/2010.

To prepare a post NASIS 6.0 pedon.mdb for data entry, first, download a new/empty pedon database from the NASIS downloads page:

http://soils.usda.gov/technical/nasis/downloads/index.html#WindowsPedonSupport

This new/empty pedon database already includes geographic area and geomorphic feature lookup data created on or after 04/20/2010. This new/empty pedon database also includes all new codes that were added between NASIS 5.4 and NASIS 6.0. For example, if a new fragment kind code was added for NASIS 6.0, and you want to select that code, you must be using a pedon database into which the latest NASIS 6.0 codes have been imported.

After downloading a new/empty pedon database, download the plant list for your MO region and import that data into the new/empty pedon database. At the time this was written the MOs hadn't yet had the time to create a post NASIS 6.0 plant list for your MO region. If you don't see plant list data for your MO region dated 04/20/2010 or later, please contact your MO to find out when that updated plant list will be available.

Special and Ordinary Referential Integrity Validation Errors

When you attempt to import pedon data that includes a record that is related to a geographic area, geomorphic feature or local plant in that pedon database, that record cannot be imported into your local NASIS database unless that same geographic area, geomorphic feature or local plant exists in your local NASIS database. If the same geographic area, geomorphic feature or local plant does not exist in your local NASIS database, a "Special Referential Integrity Validation Error" will occur when you attempt to import your pedon data.

Ordinary referential integrity validation errors can also occur. An example of an ordinary referential integrity validation error is a record in table "phorizon" that references a record in table "pedon" that does not exist. Both records involved in an ordinary referential integrity error would normally be imported into your local NASIS database. Only one of the records involved in a Special Referential Integrity Validation Error would have been imported into your local NASIS database.

"Special Referential Integrity" is a term we coined to help NASIS users understand what kind of referential integrity issue they are dealing with. Special Referential Integrity Validation Errors are not uncommon. They occur because something that existed in NASIS when your lookup data was extracted from NASIS no longer exists in NASIS at the time you attempt to import your pedon data. A Special Referential Integrity Validation Error is not a sign of a corrupted database. An ordinary referential integrity error however does mean that your pedon database has somehow been corrupted. This is a much more serious issue.

What exactly do we mean when we say "the same geographic area, geomorphic feature or local plant does not exist in your local NASIS database"? What are the criteria for "same"?

For the purpose of importing pedon data:

> Two geographic areas are the same when they have the same area symbol, the same area type name and the same area type NASIS site.

> Two geomorphic features are the same when they have the same geomorphic feature name and the same geomorphic feature type name. The only NASIS site that can create a geomorphic feature type is "Pangaea", so geomorphic feature type NASIS site does not need to be taken into account.

Two local plants are the same when they have the same common name and reference the same plant record. NASIS site does not have to be taken into account because all plants are owned by NASIS site "Flora", and as of NASIS 6.0, all local plants are owned by NASIS site "Local Plant". As of NASIS 6.0, the Local Plant table no longer permits two different records to have the same common name and reference the same plant record.

Resolving Special Referential Integrity Validation Errors

Steps for Resolving Special Referential Integrity Validation Errors

Step 1

1. In NASIS, do a refresh by clicking "Refresh Local Database" in the NASIS menu. This will ensure that all geographic areas, geomorphic features and local plants are present in your local NASIS database.

2. Attempt to import your pedon data again.

Step 2

If Special Referential Integrity Validation Errors persists, and those errors pertain to a geographic area and/or a geomorphic feature, do the following:

1. Download the latest set of geographic area and/or geomorphic feature lookup data from the NASIS Downloads Page:

http://soils.usda.gov/technical/nasis/downloads/index.html#WindowsPedonSupport

2. Update the geographic area and/or geomorphic feature lookup data in your pedon database with the downloaded data from the previous step.

3. Attempt to import your pedon data again.

Doing this may fix some Special Referential Integrity Validation Errors that were due to changes to geographic area type names, geographic area symbols, geomorphic feature type names and geomorphic feature names.

Step 3

If Step 2 does not apply, or didn't resolve your Special Referential Integrity Validation Error, your pedon data cannot be imported into your local NASIS database unless one or more of the following are done:

1. The offending record in your pedon database is changed to reference a geographic area, geomorphic feature or local plant in your pedon database that already exists in your local NASIS database.

2. The geographic area, geomorphic feature or local plant referenced by the offending record in your pedon database is added to your local NASIS database.

3. The offending record in your local pedon database is deleted.

Step 3 Option Details

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At the current time, all of the geographic area and geomorphic feature lookup data in your pedon database are owned by NASIS site "Pangaea", and performing Step 2 in this section should have been sufficient to resolve most geographic area and geomorphic feature Special Referential Integrity Validation Errors. The options below are most appropriate for local plant Special Referential Integrity Validation Errors, although for a particular circumstance, option 3 may be an acceptable solution for any kind of Special Referential Integrity Validation Error.

Step 3 Option 1 Details

If you need to change a local plant reference to a local plant that exists in your local NASIS database, and that local plant ALREADY EXISTS in your pedon database:

1. Update the offending record to reference the appropriate local plant record.

2. Attempt to import your pedon data again.

If you need to change a local plant reference to a local plant that exists in your local NASIS database, but that local plant DOES NOT EXIST in your pedon database:

1. Contact you MO and ask them to add that local plant to the local plant list for your MO.

2. After that local plant has been added to your MO's plant list, download the updated local plant list for your MO.

3. Update the local plant lookup data in your pedon database with the data you just downloaded.

4. Update the offending record in your pedon database to reference the local plant your MO just added to your MO's local plant list.

5. Attempt to import your pedon data again.

Step 3 Option 2 Details

The offending record in your pedon database references what you believe is a perfectly valid local plant for your MO.

1. Contact your MO and ask them to add this local plant to the NASIS database.

2. After that local plant has been added to the NASIS database, refresh the data in your local NASIS database by clicking "Refresh Local Database" in the NASIS menu.

3. Attempt to import your pedon data again.

Step 3 Option 3 Details

Option 3 should only be used when one of the following circumstances exists.

1. For some reason, dropping the offending record in your pedon database, and NOT manually re-adding that record in NASIS after your pedon data has been imported into your local NASIS database, is an acceptable solution.

2. You have a limited number of Special Referential Integrity Validation Errors, and although the geographic area, geomorphic feature or local plant you need to reference in your pedon database doesn't exist in your pedon database, that geographic area, geomorphic feature or local plant does exist your local NASIS database. You are in a hurry to get your pedon data imported and you are willing to manually re-add the dropped record(s) after importing your pedon data into your local NASIS database.